

About the Series

This is the eighth in a series of booklets that SAGE is presenting to the system administration community. They are intended to fill a void in the current information structure, presenting topics in a thorough, refereed fashion but staying small enough and flexible enough to grow with the community. Therefore, these booklets will be “living documents” that are updated as needed.

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Edited by Tina Darmohray

About SAGE and USENIX

SAGE, The System Administrators Guild, is a Special Technical Group within the USENIX Association dedicated to advancing the profession of system administration.

USENIX is the Advanced Computing Systems Association.

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Short Topics in
System Administration

Rik Farrow, Series Editor

Job Descriptions for System Administrators

Revised and Expanded Edition

Edited by Tina Darmobray

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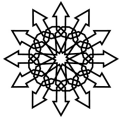
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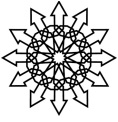
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Preface

Organizations that rely on computing resources to carry out their mission have always depended on system administration. The dramatic increase in the number and size of distributed networks of workstations in recent years has created a tremendous demand for more, and better trained, system administrators. Employers' understanding of the profession of system administration, however, has not kept pace with the growth in the number of system administrators or with the growth in complexity of system administration tasks. Both at sites with a long history of using computing resources and at sites where computers have only recently been introduced, system administrators face perception problems that present serious obstacles to the successful execution of their duties.

System administration is a widely varied task. The best system administrators are generalists: they can wire and repair cables, install new software, fix bugs, train users, offer tips for increased productivity across areas from word processing to CAD tools, evaluate new hardware and software, automate a myriad of mundane tasks, and expedite work flow at their site. In general, system administrators enable people to exploit computers at a level that gains leverage for the entire organization.

Employers frequently fail to understand the background system administrators bring to their task. Because system administration draws on knowledge from many fields, and because it has only recently begun to be taught at a few institutions of higher learning, system administrators may come from a wide range of academic backgrounds. Most get their skills through on-the-job training by apprenticing themselves to a more experienced mentor. Although the system of informal education by apprenticeship has been extremely effective in producing skilled system administrators, it is poorly understood by employers and hiring managers, who tend to focus on credentials to the exclusion of other factors when making personnel decisions.

Understanding system administrators' backgrounds, training, and the kinds of job performance to be expected is challenging; too often, employers fall back into (mis)using the job classifications with which they are familiar. These job classification problems are exacerbated by the scarcity of job descriptions for system administrators. One frequently used misclassification is that of programmer or software engineer. Although producing code is not a system administrator's primary responsibility, that is the metric by which programmers are evaluated, so system administrators thus classified often receive poor evaluations for not being "productive" enough. Another common misclassification is the confusion of system administrators with operators. Especially at smaller sites, where system administrators have to perform many of the functions normally assigned (at larger sites) to operators, they are forced to contend with

the false assumption they are nonprofessional technicians. This, in turn, makes it very difficult for them to be compensated commensurately with their skill and experience.

SAGE, as the professional organization for system administrators, formed the sage-jobs working group to address these problems. Its goals included the creation of a set of appropriate job descriptions for system administrators and promotion of their adoption by organizations that employ system administrators.

Below are the current job description templates, with an additional list of check-off items. The templates are intended to describe the core attributes of system administrators at various levels of job performance, while the check-off list is intended to augment the core descriptions. In particular, the check-off list addresses site-specific needs or special areas of expertise. Job descriptions for more experienced system administrators or more senior positions will typically include more items from the check-off list.

When originally introduced in 1993, the Job Descriptions were focused on UNIX system administrators. In 2001 the descriptions were updated in general, and revised specifically to be more inclusive of non-UNIX operating systems, primarily reflecting the increase of Windows-based operating systems. Particular attention was paid to addressing some of the titles originating from the PC environment and to mapping them accurately into the system administration descriptions. The new material has been reviewed by managers responsible for hiring all flavors of system administrators.

We would like to encourage interested parties to join SAGE and the SAGE working groups to further this and other activities. Please visit <http://www.sage.org> to find out more about SAGE activities and services.

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